

- If one of the rectangular components of force 50N is 25N, find the value of the other. (Year - 2010)
- Determine the unit vector perpendicular to the plane containing A & B if $\mathbf{A} = 2\mathbf{i} - 3\mathbf{j} - \mathbf{k}$ & $\mathbf{B} = \mathbf{i} + 4\mathbf{j} - 2\mathbf{k}$ (Year - 2006)
- Find the angle between $\mathbf{A} = 2\mathbf{i} + 2\mathbf{j} - \mathbf{k}$ & $\mathbf{B} = 6\mathbf{i} - 3\mathbf{j} + 2\mathbf{k}$ (Year - 2005)
- Two forces of equal magnitude are acting at a point. Find the angle between the forces & the magnitude of the resultant is also equal to the magnitude of either of these forces. (Year - 2003 Pre Eng)
- Find the area of a parallelogram if its two sides are formed by the vectors $\mathbf{A} = 2\mathbf{i} - 3\mathbf{j} - \mathbf{k}$ & $\mathbf{B} = \mathbf{i} + 4\mathbf{j} - 2\mathbf{k}$ (Year - 2003 Pre Med)
- If $\mathbf{P} = 2\mathbf{i} - 2\mathbf{j} + 3\mathbf{k}$ & $\mathbf{Q} = 3\mathbf{i} + 3\mathbf{j} + 3\mathbf{k}$ find a unit vector perpendicular to the plane containing both P & Q. If P & Q formed the side of a parallelogram. Find the area of the parallelogram. (Year - 2002 Pre Med)

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- An object moves along a straight line from (3, 2, 6) to (14, 13, 9) when a uniform force $\mathbf{F} = 4\mathbf{i} + \mathbf{j} + 3\mathbf{k}$ acts on it. Find the work done & the angle between the force & displacement. (Year -2001)
- If $\mathbf{A} = 3\mathbf{i} + \mathbf{j} - 2\mathbf{k}$, $\mathbf{B} = -\mathbf{i} + 3\mathbf{j} + 3\mathbf{k}$. Find $\mathbf{A} + \mathbf{B}$ & angle between A & B. (Year - 2000)

- Determine a unit vector perpendicular to the plane containing **A & B** if **A = 2i - 3j - k** & **B = i + 4j - 2k**. (Year - 1999)
- Calculate the work done by a force given by **F = 3i + 4j + 5k** in displacing a body from the position 'A' to the position 'B'. The position vectors of A & B are
r_A = 2i + 5j + k & **r_B = 7i + 3j + 5k**. (Year - 1999)
- If one of the rectangular components of a force of 100N is 50N. Find the other component (Year - 1998)
- Define unit & null vectors. Two vectors have magnitudes 4 & 5 units. The angle between them is 30° taking the first vector along X-axis, Calculate the magnitude & direction of the resultant. (Year - 1997)
- Given that **A = i + 2j + 3k** & **B = 2i + 4j - k**, find (Year - 1997)
 - |3A - B|
 - A x B
 - The angle between A & B.
- If two vectors A x B are such that **A = 3**, **B = 2** & **A - B = 4**, Evaluate (i) **A . B** & (ii) **A + B** (Year - 1995)
- If **A = i + j** & **B = 2i - j + 3k**, find a unit vector parallel to **A - 2B**. (Year - 1995)
- Given **r₁ = 2i - 2j + k**, **r₂ = 3i + 4j - 3k** & **r₃ = 4i + 2j + 2k**, find the magnitude of the following vectors (Year - 1994)
 - |r₃|

- $| \mathbf{r}_1 + \mathbf{r}_2 + \mathbf{r}_3 |$
- $| 2\mathbf{r}_1 - 3\mathbf{r}_2 - 5\mathbf{r}_3 |$
- Calculate the work done by a force given by $\mathbf{F} = 6\mathbf{i} + 8\mathbf{j} + 10\mathbf{k}$ in displacing a body from the position A to the position B. the position vectors of A & B are
 $\mathbf{r}_a = 4\mathbf{i} + 7\mathbf{j} + 4\mathbf{k}$ & $\mathbf{r}_b = 9\mathbf{i} + 5\mathbf{j} + 7\mathbf{k}$ (Year - 1994)

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